7057-EP



TEKTRONIX, INC.
New European Patent Application

Agent File No.: 25380

# Method for Setting Up a Procedure of a Communication Taking Place Between at Least Two Instances and a Protocol Tester Realising Said Method

## DESCRIPTION:

The present invention relates to a method for setting up a procedure of a communication taking place between at least to instances, with one instance being a protocol tester. It also relates to a protocol tester, in which said method has been realised.

In the field of protocol testing it is necessary to clearly specify the communication procedure by which a test is described, so that this procedure can be executed automatically by a machine. Languages such as TTCN (Tree and Tabular Combined Notation) make this possible, but they are complex and difficult to understand for an untrained reader. TTCN has prevailed in the field of Conformance Testing because these tests are very comprehensive, and TCCN supports such comprehensive tests very well. Apart from that there are various proprietary test description languages. To facilitate understanding, the standardised language MSC (Message Sequence Charts) is used for the purpose of documenting and describing simple procedures. Further details on MSC can be taken from ITU-T Z.120, the contents of which is, by this reference, incorporated into the disclosure of this patent application. MSC consists of standardised process flow diagrams, also referred to as arrow diagrams or X diagrams. They can be understood independent of programming knowledge. However, automatic execution of communications described by MSC is not possible on protocol testers. To obtain tests that can be executed, it is therefore necessary to write so-called scripts, which requires the user to become thoroughly acquainted with the relevant programming language. In addition, it is necessary to prepare documentation that is generally understood. For a test it is therefore

necessary on the one hand to prepare graphical and textual documentation and on the other a source code or a binary that can be executed.

This state of the art results in a number of disadvantages: It is frequently necessary to convert existing tests, so there is the risk of inconsistencies. The test communication specifications often do not contain information on the configuration, or at least not in a format that can be read by a machine or by man. The different languages often represent proprietary approaches, which differ from equipment to equipment and have to be learned anew. The user is not supported or only receives rudimentary support with protocol knowledge when creating the messages and events.

The present invention is therefore based on the object of overcoming the disadvantages of the procedure described above, which is known from the state of the art.

This object is achieved by way of a method according to claim 1.

According to a further aspect of the present invention, a protocol tester with the features of claim 8 is made available.

The invention allows setting up the desired communication procedure in an easily understandable, graphical, standardised form, such as MSC. With the solution according to the present invention it is now possible to graphically specify the communication interfaces and / or the communication data. This is not possible with only MSC itself. By having description files allocated to the parameters which may be selected graphically, there is the possibility for the protocol tester to automatically transform the parameters selected by the user into a communication procedure version that can be executed. By graphically providing parameter compilations from which the user can select, the user is supported during each phase with configuration-specific and protocol-specific information. Apart from a short introduction to a graphics standard such as MSC, the user requires no other up-front knowledge to

successfully apply the method according to the present invention. The graphics are displayed on a display unit such as a monitor or a screen.

This way, both documentation and implementation are completed in one step, with the user always seeing the documentation view on a graphical user interface.

Operator friendliness for the user increases with the number of choices graphically made available to such user. Therefore, with reference to the method according to the present invention, in an especially preferred embodiment of the present invention, all selection steps according to a) - d) are supported graphically, with all parameters that may be selected with the selection means having description files assigned to them, which can then be used in step e) to set up a communication procedure that may be executed between the two instances.

The abstract communication interfaces preferably comprise so-called Service Access Points (SAPs), the communication data preferably comprise so-called Protocol Data Units (PDUs) and / or so-called Abstract Service Primitives (ASPs). These are primitives, i.e. data packets, which are used by different communication layers of the same instance to communicate with each other. Accordingly, an SAP is a point at which different ASPs may be exchanged. ASPs preferably contain PDUs, with each PDU usually having to be set up individually.

The selection of communication data can comprise two partial steps; first the graphical selection of a data format, and then the graphical creation of a communication sequence between the instances involved.

As regards the last partial step mentioned, it is possible to provide the opportunity of entering source codes.

The features mentioned above apply accordingly to a protocol tester according to the present invention.

Further advantageous embodiments of the present invention are defined in the subclaims.

The following provides a more detailed description of an example of an embodiment, with reference being made to the drawings attached.

They show in

Figure 1 a first graphical user interface as employed for the method according to the present invention;

Figure 2 a second graphical user interface as employed for the method according to the present invention;

Figure 3 the user interface of Figure 2 in another presentation mode;

Figure 4 the user interface of Figure 2 in a further presentation mode;

Figure 5 a third graphical user interface as employed for the method according to the present invention;

Figure 6 the user interface of Figure 5 in another presentation mode;

Figure 7 the user interface of Figure 5 in a further presentation mode.

Figure 1 shows a graphical user interface 10, which allows in a first step graphically selecting the instances taking part in a communication. Graphical selection in connection with the present invention means that a symbol or a text proposal is shown graphically on a graphical user interface, such as a PC screen, and can be selected by simple activation, i.e. for example by

clicking on it with a mouse. One of the instances is a protocol tester on which the method according to the present invention is made available, with the protocol tester in the present case emulating a component TC_1. Using the two buttons "Add" 12 and "Delete" 14, the user can add further instances or delete instances listed. In a field 16 the compilation of the instances is listed, while in field 18 said compilation is shown as a diagram. In a field 19 the name of the instance can be selected, in field 20 the instance type. Two buttons 22, 24 allow the user to move from one level of the definition of the communication procedure to the next, both in the direction of more detailed specifications and in the direction of higher-level presentations. A "Cancel" button 26 allows leaving a level, meaning that the changes made are reset. A "Help" button 28 offers the user further support.

According to Figure 2, which shows another representation of the user interface 10, the present communication procedure has the name Gateway_1; see field 22. Taking part in said procedure is a first instance TC_1, according to field 24, and a second instance IUT_1, according to field 27. According to field 29a, the emulated protocol is of type isdn12, with field 29b offering further protocols to chose from. In a field 30, various communication procedures which may be chosen for further processing can be offered. Buttons 12, 14, 22, 24, 26, 28 described with reference to Figure 1 appear again in a similar form and with a similar function – c.f. the user interfaces below – and are therefore not described again.

Figure 3 shows the user interface 10 of Figure 1 in a different presentation mode, in this case for selecting an SAP; see field 32a. In field 32b there are further SAPs to chose from. All SAPs shown in field 32b are offered for the selected emulation isdn12.

Figure 4 shows another presentation form of the user interface 10 of Figure 2, with a format for the communication data (ASPs, PDUs) now being used in a field 34 comprising so-called Message Pools.

Figure 5 shows another user interface 36 which provides the user with various types of information in a field 38: First, the instances selected by the user, then the test scenario (Gateway_1) agreed in accordance with Figures 1 to 4, and the data format (Message Pools). The following initially only refers to Figure 6: The user interface 36 shows a large number of buttons 40, which, as is known from word processing or graphics programs, can be clicked, for example by using a mouse. Using these buttons, one can graphically set up a communication procedure in a field 42. Figure 6 shows the possibility of incorporating codes in the programming language Forth (Draft Proposal ANSI Standard 1994) into a block TE_cfg 44, by using an entry mask 46. To enter codes in another programming language, other entry masks may be envisaged.

Back to Figure 5: It shows as an example of a part of a communication procedure in field 48 an instance awaiting, initially alternatively, the APSs DL_ESTABLISH_CNF or DL_ESTABLISH_IND. Next, a timer T_WaitInit with a 5 sec. duration is started and the elapsing of the time is awaited.

Figure 7 shows an isdn-PDU "SETUP_1" being incorporated into a flow diagram prepared graphically as a send message. ASPs with PDUs from the Message Pool selected earlier are offered in an entry mask 50. The PDU selected may be entered into a visually highlighted field 52. In a field 54 the user is offered further information on the ASP or PDU selected.

In the way just described it is thus possible to set up a communication procedure, with preferably all selectable parameters being assigned description files which may be used automatically with each other to automatically set up through the protocol tester a communication procedure that may be executed between the instances.

When a code that may be executed is created, there are three interacting components: First the graphical user interface, which stores the selected parameters, in particular also the communication sequence, in an internal

structure. Then there is a compiler which translates the selected parameters into temporary files, and, finally, a linker which reads said temporary files and converts them into the selected interpreter script language, such as ANS Forth. During this process the whole communication procedure as defined by the user is written into a script file.

Annex A1 shows the code automatically generated by the protocol tester for the figures described.

Annex A1

```
 ( ***** Tektronix MSC-Linker <V0.92.0> builds scenario 'isdn_user' **-*- forth
-*-** )

" $MSC$Script$" find [if] forget $MSC$Script$ [then] drop variable
$MSC$Script$
" emul"   find 0= [if] loadm emul   [then] drop
" error"  find 0= [if] loadm error  [then] drop
" mbslib" find 0= [if] loadm mbslib [then] drop
" mforth" find 0= [if] loadm mforth [then] drop
default-order
v_trace
v_screen

( >>>>>>>>>> Allocation <<<<<<<<<< )
( create instance variables and constants... )
CREATE $MSC$_InstanceVars 4 ALLOT


1 CONSTANT MSC_NUM_OF_INSTANCES
$MSC$_InstanceVars MSC_NUM_OF_INSTANCES 4 * 0 FILL
( create timer variables and constants... )
CREATE $MSC$_TimerVars 40 ALLOT
$MSC$_TimerVars 40 0 FILL
CREATE MSC_TIMER 20 ALLOT
MSC_TIMER 20 0 FILL
5 CONSTANT MSC_NUM_OF_TIMERS
( create pool variables and constants... )
CREATE $MSC$_PoolVars 4 ALLOT
1 CONSTANT MSC_NUM_OF_POOLS
$MSC$_PoolVars 4 0 FILL
( create message variables and constants... )
CREATE $MSC$_MsgVars 132 ALLOT
$MSC$_MsgVars 132 0 FILL
11 CONSTANT MSC_NUM_OF_MESSAGES
CREATE $MSC$_MsgDecodeVars 4 ALLOT
$MSC$_MsgDecodeVars 4 0 FILL
1 CONSTANT MSC_NUM_OF_MSGDECODEVARS  ( one per TM )
CREATE $MSC$_MsgFolderVars 44 ALLOT
$MSC$_MsgFolderVars 44 0 FILL
11 CONSTANT MSC_NUM_OF_FOLDERS
CREATE $MSC$_EventStructureVars MSC_NUM_OF_POOLS MSC_NUM_OF_INSTANCES * 4 *
ALLOT
$MSC$_EventStructureVars MSC_NUM_OF_POOLS MSC_NUM_OF_INSTANCES * 4 * 0 FILL
CREATE $MSC$_MsgSizeVars 4 ALLOT
$MSC$_MsgSizeVars 4 0 FILL
variable $MSC$_MsgMatched?
( create temporary variables and constants... )
variable $MSC$_TempFolderHandle
variable $MSC$_PDecoutVar
( create startstate variables... )
variable $MSC$_Req-State
```

```
( >>>>>>>>>> Constants <<<<<<<<<< )
( create mapping of gateway name to poolindex )
0 constant MSC-GW-Gateway_1 \ Mapping Gatewayname 'Gateway_1' -> Poolindex '0'

( >>>>>>>>>> Variables <<<<<<<<<< )
variable MSC-VAR-Gateway_1-SAPI
variable MSC-VAR-Gateway_1-TEI

( >>>>>>>>>> Commands <<<<<<<<<< )
include pc:boot:/share/pfe/msc_lib.4th

( constructor word ... )
: $MSC$_Constructor ( -- )
   " Cannot open pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'" "
pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc" 0 $MSC$_OpenPool \ open pool
'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 8 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'rCONN_1'" " rCONN_1" 0 8 8 $MSC$_InitMsgVar \ init
message 'rCONN_1' of pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'


   " Cannot open folder  'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 3 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'rDL_ESTABLISH_CNF_1'" " rDL_ESTABLISH_CNF_1" 0 3 3
$MSC$_InitMsgVar \ init message 'rDL_ESTABLISH_CNF_1' of pool
'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 2 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'sDL_ESTABLISH_REQ_1'" " sDL_ESTABLISH_REQ_1" 0 2 2
$MSC$_InitMsgVar \ init message 'sDL_ESTABLISH_REQ_1' of pool
'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 4 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'rDL_ESTABLISH_IND_1'" " rDL_ESTABLISH_IND_1" 0 4 4
$MSC$_InitMsgVar \ init message 'rDL_ESTABLISH_IND_1' of pool
'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 10 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'rREL_COM_1'" " rREL_COM_1" 0 10 10 $MSC$_InitMsgVar
\ init message 'rREL_COM_1' of pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-
pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 7 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'rALERT_1'" " rALERT_1" 0 7 7 $MSC$_InitMsgVar \
```

```
init message 'rALERT_1' of pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 9 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'sDISC_1'" " sDISC_1" 0 9 9 $MSC$_InitMsgVar \ init
message 'sDISC_1' of pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 6 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'rCALL_PROC_1'" " rCALL_PROC_1" 0 6 6
$MSC$_InitMsgVar \ init message 'rCALL_PROC_1' of pool 'pc:c:/k1297/MBS-
Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 1 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'rMDL_ASSIGN_CNF_1'" " rMDL_ASSIGN_CNF_1" 0 1 1
$MSC$_InitMsgVar \ init message 'rMDL_ASSIGN_CNF_1' of pool 'pc:c:/k1297/MBS-
Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 0 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   " Cannot init message 'sMDL_ASSIGN_REQ_1'" " sMDL_ASSIGN_REQ_1" 0 0 0
$MSC$_InitMsgVar \ init message 'sMDL_ASSIGN_REQ_1' of pool 'pc:c:/k1297/MBS-
Pools/STK-etsi93-pool1.pdc'
   " Cannot open folder 'PROT<ETSI> send to EMUL<isdnl2>'" " PROT<ETSI> send
to EMUL<isdnl2>" 0 5 $MSC$_OpenFolder \ open folder 'PROT<ETSI> send to
EMUL<isdnl2>' within pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'


   " Cannot init message 'sSETUP_1'" " sSETUP_1" 0 5 5 $MSC$_InitMsgVar \
init message 'sSETUP_1' of pool 'pc:c:/k1297/MBS-Pools/STK-etsi93-pool1.pdc'
   MSC-VAR-Gateway_1-SAPI " SAPI" " PROT<ETSI> send to EMUL<isdnl2>" 0
$MSC$_AssignMSCVar
   MSC-VAR-Gateway_1-TEI " TEI" " PROT<ETSI> send to EMUL<isdnl2>" 0
$MSC$_AssignMSCVar
   ;

( destructor word ... )
: $MSC$_Destructor ( -- )
   1 0 DO
      I $MSC$_GetPoolHandle k12mbspoolclose DROP
   LOOP
   ;

( >>>>>>>>>> Initialization <<<<<<<<<< )
5000 4 $MSC$_SetExtTimerVar \ init. timer 'T_Pause' of instance 'Phone'
45000 1 $MSC$_SetExtTimerVar \ init. timer 'T310' of instance 'Phone'
4000 0 $MSC$_SetExtTimerVar \ init. timer 'T303' of instance 'Phone'
30000 3 $MSC$_SetExtTimerVar \ init. timer 'T305' of instance 'Phone'
20000 2 $MSC$_SetExtTimerVar \ init. timer 'T_Call' of instance 'Phone'
0 0 $MSC$_InitMsg \ Create k12MBSevent structure for instance 'Phone' and
gateway 'Gateway_1'
```

```
TM0 ( >>>>>>>>>> start of instance 'Phone' <<<<<<<<<< )

( Segments of Instance 'Phone':
+--------+-------------------------+-------------+--------------+
|   Type | Segment Name            | State       | Length       |
+--------+-------------------------+-------------+--------------+
|  INIT  |  - no name -            | 0000000000  | 0000000001   |
|  END   |  - no name -            | 0000000001  | 0000000001   |
|  DOC   |  START                  | 0000000002  | 0000000004   |
|  DOC   |  NULL                   | 0000000006  | 0000000001   |
|  DOC   |  CALL_INITIATED         | 0000000007  | 0000000003   |
|  DOC   |  CALL_PROCEEDING        | 0000000010  | 0000000003   |
|  DOC   |  CALL_DELIVERED_ACTIV   | 0000000013  | 0000000002   |
|  DOC   |  DISCONNECT_REQUEST     | 0000000015  | 0000000004   |
|  CONN  |  NULL                   | 0000000019  | 0000000001   |
|  CONN  |  CALL_INITIATED         | 0000000020  | 0000000001   |
|  CONN  |  CALL_PROCEEDING        | 0000000021  | 0000000001   |
|  CONN  |  CALL_DELIVERED_ACTIV   | 0000000022  | 0000000001   |
+--------+-------------------------+-------------+--------------+ )

    \ -----  init segment  -----
    0 STATE_INIT{
            128 " TM0 starts" $MSC$_TraceMsg
            0 $MSC$_ResetGotoModifierFlag \ init. instance 'Phone'
            4 $MSC$_InitTimerVar \ init. timer 'T_Pause'
            1 $MSC$_InitTimerVar \ init. timer 'T310'
            0 $MSC$_InitTimerVar \ init. timer 'T303'
            3 $MSC$_InitTimerVar \ init. timer 'T305'
            2 $MSC$_InitTimerVar \ init. timer 'T_Call'
            ( switch command for startstate... )
            $MSC$_Req-State @ CASE
              1 OF 2 NEW_STATE ENDOF


            2 OF 6 NEW_STATE ENDOF
            2 0 $MSC$_NewState ( goto START )
          ENDCASE
  }STATE_INIT

  \  ----- end segment -----
  1 STATE_INIT{
          " instance 'Phone' stops" $MSC$_PrintString
          128 " TM0 stops" $MSC$_TraceMsg
  }STATE_INIT
  1 STATE{
          ( this is the end state - loop forever )
  }STATE

  \  ----- document segment 'START' -----
  2 STATE_INIT{
          32 " Forthbox TE_cfg start " $MSC$_TraceMsg
```

```
          ( start forth box 'TE_cfg' ) " config lapd.General.Side=TE_PM"
EMU_ADMIN ( end forth box 'TE_cfg' )
          64 " Forthbox TE_cfg end " $MSC$_TraceMsg
          16 " Send message 'PROT<ETSI> send to EMUL<isdnl2>/sMDL_ASSIGN_REQ_1'
over gateway 'Gateway_1 ' " $MSC$_TraceMsg
          " Cannot send message 'sMDL_ASSIGN_REQ_1'" 0 0 0 $MSC$_SendPrimitive
   }STATE_INIT
   2 STATE{
       " Error while matching primitive 'rMDL_ASSIGN_CNF_1'" 1 0 0
$MSC$_RecvPrimitive
       ACTION{
          8 " Received message 'PROT<ETSI> send to
EMUL<isdnl2>/rMDL_ASSIGN_CNF_1' from gateway 'Gateway_1 ' " $MSC$_TraceMsg
          0 0 1 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rMDL_ASSIGN_CNF_1' and gateway 'Gateway_1'
          1 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rMDL_ASSIGN_CNF_1' from gateway 'Gateway_1'
          0 $MSC$_ResetGotoModifierFlag
          16 " Send message 'PROT<ETSI> send to
EMUL<isdnl2>/sDL_ESTABLISH_REQ_1' over gateway 'Gateway_1 ' " $MSC$_TraceMsg
          " Cannot send message 'sDL_ESTABLISH_REQ_1'" 2 0 0
$MSC$_SendPrimitive
          3 0 $MSC$_NewState
       }ACTION
       ?TM_TIMEOUT
       ACTION{
          1 " Unexpected timer event " $MSC$_TraceMsg
       }ACTION
       FALSE E-SAP @ 0 = OR
       ACTION{
          8 " Unexpected message event " $MSC$_TraceMsg
          0 0 1 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rMDL_ASSIGN_CNF_1' and gateway 'Gateway_1'
       }ACTION
   }STATE
   3 STATE_INIT{
          3 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' from gateway 'Gateway_1'


   4 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
 EMUL<isdnl2>/rDL_ESTABLISH_IND_1' from gateway 'Gateway_1'
    }STATE_INIT
   3 STATE{
       " Error while matching primitive 'rDL_ESTABLISH_CNF_1'" 3 0 0
 $MSC$_RecvPrimitive
       ACTION{
          0 0 3 $MSC$_FreeEventStructure \ free event structure of message
 'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' and gateway 'Gateway_1'
          0 0 4 $MSC$_FreeEventStructure \ free event structure of message
 'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_IND_1' and gateway 'Gateway_1'
```

```
         0 $MSC$_SetGotoModifierFlag
         4 0 $MSC$_NewState
      }ACTION
      " Error while matching primitive 'rDL_ESTABLISH_IND_1'" 4 0 0
$MSC$_RecvPrimitive
      ACTION{
         0 0 3 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' and gateway 'Gateway_1'
         0 0 4 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_IND_1' and gateway 'Gateway_1'
         0 $MSC$_SetGotoModifierFlag
         5 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
         1 " Unexpected timer event " $MSC$_TraceMsg
         0 0 3 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' and gateway 'Gateway_1'
         0 0 4 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_IND_1' and gateway 'Gateway_1'
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         8 " Unexpected message event " $MSC$_TraceMsg
         0 0 3 $MSC$_FreeEventStructure \ free event structure of dessage
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' and gateway 'Gateway_1'
         0 0 4 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_IND_1' and gateway 'Gateway_1'
      }ACTION
    }STATE
   4 STATE{
      " Error while matching primitive 'rDL_ESTABLISH_CNF_1'" 3 0 0
$MSC$_RecvPrimitive
      ACTION{
         8 " Received message 'PROT<ETSI> send to
EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' from gateway 'Gateway_1 ' " $MSC$_TraceMsg
         0 0 3 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' and gateway 'Gateway_1'
         3 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' from gateway 'Gateway_1'
         0 $MSC$_ResetGotoModifierFlag
         6 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
          1 " Unexpected timer event " $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
          8 " unexpected message event " $MSC$_TraceMsg
          0 0 3 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_CNF_1' and gateway 'Gateway_1'
```

```
        }ACTION
     }STATE
    5 STATE{
       " Error while matching primitive 'rDL_ESTABLISH_IND_1'" 4 0 0
$MSC$_RecvPrimitive
        ACTION{
            8 " Received message 'PROT<ETSI> send to
EMUL<isdnl2>/rDL_ESTABLISH_IND_1' from gateway 'Gateway_1 ' " $MSC$_TraceMsg
            0 0 4 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_IND_1' and gateway 'Gateway_1'
            4 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rDL_ESTABLISH_IND_1' from gateway 'Gateway_1'
            0 $MSC$_ResetGotoModifierFlag
            6 0 $MSC$_NewState
        }ACTION
        ?TM_TIMEOUT
        ACTION{
            1 " Unexpected timer event " $MSC$_TraceMsg
        }ACTION
        FALSE E-SAP @ 0 = OR
        ACTION{
            8 " Unexpected message event " $MSC$_TraceMsg
            0 0 4 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rDL_ESTABLISH_IND_1' and gateway 'Gateway_1'
        }ACTION
     }STATE

        \  ----- document segment 'NULL' -----
    6 STATE_INIT{
            16 " Send message 'PROT<ETSI> send to EMUL<isdnl2>/sSETUP_1' over
gateway 'Gateway_1 ' " $MSC$_TraceMsg
            " Cannot send message 'sSETUP_1'" 5 0 0 $MSC$_SendPrimitive
            2 " Timer 'T303' set with value '4000'" $MSC$_TraceMsg
            4000 0 $MSC$_SetTimer \ timer 'T303'
            19 0 $MSC$_NewState
    }STATE_INIT


        \  ----- document segment 'CALL_INITIATED' -----
    7 STATE{
       " Error while matching primitive 'rCALL_PROC_1'" 6 0 0
$MSC$_RecvPrimitive
        ACTION{
            0 0 6 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
            0 $MSC$_SetGotoModifierFlag
            8 0 $MSC$_NewState
        }ACTION
        0 $MSC$_Timeout \ timer 'T303'
        ACTION{
```

```
          0 0 6 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
          0 $MSC$_SetGotoModifierFlag
          9 0 $MSC$_NewState
       }ACTION
       ?TM_TIMEOUT
       ACTION{
          1 " Unexpected timer event " $MSC$_TraceMsg
          0 0 6 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
       }ACTION
       FALSE E-SAP @ 0 = OR
       ACTION{
          8 " Unexpected message event " $MSC$_TraceMsg
          0 0 6 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
       }ACTION
    }STATE
   8 STATE{
       " Error while matching primitive 'rCALL_PROC_1'" 6 0 0
$MSC$_RecvPrimitive
       ACTION{
          8 " Received message 'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1'
from gateway 'Gateway_1 ' " $MSC$_TraceMsg
          0 0 6 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
          6 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rCALL_PROC_1' from gateway 'Gateway_1'
          0 $MSC$_ResetGotoModifierFlag
          4 " Timer 'T303' reset" $MSC$_TraceMsg
          0 $MSC$_ResetTimer \ timer 'T303'
          2 " Timer 'T310' set with value '45000'" $MSC$_TraceMsg
          45000 1 $MSC$_SetTimer \ timer 'T310'
          20 0 $MSC$_NewState
       }ACTION
       ?TM_TIMEOUT
       ACTION{
          1 " Unexpected timer event " $MSC$_TraceMsg
       }ACTION
       FALSE E-SAP @ 0 = OR
       ACTION{
          8 " Unexpected message event " $MSC$_TraceMsg
          0 0 6 $MSC$_FreeEventStructure \ free event structure of message
 'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
       }ACTION
     }STATE
    9 STATE{
       0 $MSC$_Timeout \ timer 'T303'
       ACTION{
          1 " Received timeout 'T303' " $MSC$_TraceMsg
          0 $MSC$_ResetTimerFlag \ timer 'T303'
          0 $MSC$_ResetGotoModifierFlag
```

```
         20 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{



         1 " Unexpected timer event " $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         8 " Unexpected message event " $MSC$_TraceMsg
      }ACTION
   }STATE

   \  ----- document segment 'CALL_PROCEEDING'  -----
   10 STATE{
      " Error while matching primitive 'rALERT_1'" 7 0 0 $MSC$_RecvPrimitive
      ACTION{
         0 0 7 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'
         0 $MSC$_SetGotoModifierFlag
         11 0 $MSC$_NewState
      }ACTION
      1 $MSC$_Timeout \ timer 'T310'
      ACTION{
         0 0 7 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'
         0 $MSC$_SetGotoModifierFlag
         12 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
         1 " Unexpected timer event " $MSC$_TraceMsg
         0 0 7 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         8 " Unexpected message event " $MSC$_TraceMsg
         0 0 7 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'
      }ACTION
   }STATE
   11 STATE{
      " Error while matching primitive 'rALERT_1' " 7 0 0 $MSC$_RecvPrimitive
      ACTION{
         8 " Received message 'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' from
gateway 'Gateway_1 ' " $MSC$_TraceMsg
         0 0 7 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'
         7 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
```

```
EMUL<isdnl2>/rALERT_1' from gateway 'Gateway_1'
          0 $MSC$_ResetGotoModifierFlag
          4 " Timer 'T310' reset" $MSC$_TraceMsg
          1 $MSC$_ResetTimer \ timer 'T310'
          21 0 $MSC$_NewState
       }ACTION
       ?TM_TIMEOUT
       ACTION{
          1 " Unexpected timer event " $MSC$_TraceMsg
       }ACTION
       FALSE E-SAP @ 0 = OR



        ACTION{
          8 " Unexpected message event " $MSC$_TraceMsg
          0 0 7 $MSC$_FreeEventStructure \ free event s: ucture of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'
       }ACTION
   }STATE
   12 STATE{
       1 $MSC$_Timeout \ timer 'T310'
       ACTION{
          1 " Received timeout 'T310' " $MSC$_TraceMsg
          1 $MSC$_ResetTimerFlag \ timer 'T310'
          0 $MSC$_ResetGotoModifierFlag
          21 0 $MSC$_NewState
       }ACTION
       ?TM_TIMEOUT
       ACTION{
          1 " Unexpected timer event " $MSC$_TraceMsg
       }ACTION
       FALSE E-SAP @ 0 = OR
       ACTION{
          8 " Unexpected message event " $MSC$_TraceMsg
       }ACTION
   }STATE

   \ ----- document segment 'CALL_DELIVERED_ACTIVE'   -----
   13 STATE{
       " Error while matching primitive 'rCONN_1'" 8 0 0 $MSC$_RecvPrimitive
       ACTION{
          8 " Received message 'PROT<ETSI> send to EMUL<isdnl2>/rCONN_1' from
gateway 'Gateway_1 ' " $MSC$_TraceMsg
          0 0 8 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCONN_1' and gateway 'Gateway_1'
          8 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rCONN_1' from gateway 'Gateway_1'
          0 $MSC$_ResetGotoModifierFlag
          2 " Timer 'T_Call' set with value '20000'" $MSC$_TraceMsg
          20000 2 $MSC$_SetTimer \ timer 'T_Call'
          14 0 $MSC$_NewState
```

```
      }ACTION
      ?TM_TIMEOUT
      ACTION{
         1 " Unexpected timer event " $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         8 " Unexpected message event " $MSC$_TraceMsg
         0 0 8 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCONN_1' and gateway 'Gateway_1'
      }ACTION
    }STATE
   14 STATE{
      2 $MSC$_Timeout \ timer 'T_Call'
      ACTION{
         1 " Received timeout 'T_Call' " $MSC$_TraceMsg
         2 $MSC$_ResetTimerFlag \ timer 'T_Call'
         0 $MSC$_ResetGotoModifierFlag


         16 " Send message 'PROT<ETSI> send to EMUL<isdnl2>/sDISC_1' over
gateway 'Gateway_1 ' " $MSC$_TraceMsg
         " Cannot send message 'sDISC_1'" 9 0 0 $MSC$_SendPrimitive
         2 " Timer 'T305' set with value '30000'" $MSC$_TraceMsg
         30000 3 $MSC$_SetTimer \ timer 'T305'
         22 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
         1 " Unexpected timer event " $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         8 " Unexpected message event " $MSC$_TraceMsg
      }ACTION
   }STATE

   \  ----- document segment 'DISCONNECT_REQUEST' -----
  15 STATE{
      " Error while matching primitive 'rREL_COM_1'" 10 0 0
$MSC$_RecvPrimitive
      ACTION{
         0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'
         0 $MSC$_SetGotoModifierFlag
         16 0 $MSC$_NewState
      }ACTION
      3 $MSC$_Timeout \ timer 'T305'
      ACTION{
         0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'
         0 $MSC$_SetGotoModifierFlag
```

```
         17 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
         1 " Unexpected timer event " $MSC$_TraceMsg
         0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         8 " Unexpected message event " $MSC$_TraceMsg
         0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'
      }ACTION
    }STATE
  16 STATE{
      " Error while matching primitive 'rREL_COM_1'" 10 0 0
$MSC$_RecvPrimitive
      ACTION{
         8 " Received message 'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1'
from gateway 'Gateway_1 ' " $MSC$_TraceMsg
         0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'



         10 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rREL_COM_1' from gateway 'Gateway_1'
         0 $MSC$_ResetGotoModifierFlag
         18 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
         1 " Unexpected timer event " $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         8 " Unexpected message event " $MSC$_TraceMsg
         0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'
      }ACTION
  }STATE
  17 STATE{
      3 $MSC$_Timeout \ timer 'T305'
      ACTION{
         1 " Received timeout 'T305' " $MSC$_TraceMsg
         3 $MSC$_ResetTimerFlag \ timer 'T305'
         0 $MSC$_ResetGotoModifierFlag
         18 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
```

```
        1 " Unexpected timer event " $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
        8 " Unexpected message event " $MSC$_TraceMsg
      }ACTION
  }STATE
  18 STATE_INIT{
        2 " Timer 'T_Pause' set with value '5000'" $MSC$_TraceMsg
        5000 4 $MSC$_SetTimer \ timer 'T_Pause'
  }STATE_INIT
  18 STATE{
      4 $MSC$_Timeout \ timer 'T_Pause'
      ACTION{
        1 " Received timeout 'T_Pause' " $MSC$_TraceMsg
        4 $MSC$_ResetTimerFlag \ timer 'T_Pause'
        0 $MSC$_ResetGotoModifierFlag
        1 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
        1 " Unexpected timer event " $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
        8 " Unexpected message event " $MSC$_TraceMsg
      }ACTION
    }STATE

    \  ----- connector segment 'NULL' -----


  19 STATE_INIT{
        6 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rCALL_PROC_1'
        0 $MSC$_ResetTimerFlag \ timer 'T303'
  }STATE_INIT
  19 STATE{
      " Error while matching primitive 'rCALL_PROC_1'" 6 0 0
 $MSC$_RecvPrimitive
      ACTION{
        0 0 6 $MSC$_FreeEventStructure \ free event structure of message
 'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
        0 $MSC$_SetGotoModifierFlag
        6 $MSC$_SetMsgFlag \ message 'PROT<ETSI> send to
 EMUL<isdnl2>/rCALL_PROC_1'
        7 0 $MSC$_NewState
      }ACTION
      0 $MSC$_Timeout \ timer 'T303'
      ACTION{
        0 0 6 $MSC$_FreeEventStructure \ free event structure of message
 'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
```

```
         0 $MSC$_SetGotoModifierFlag
         0 $MSC$_SetTimerFlag \ timer 'T303'
         7 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
          " Unexpected timer event" $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         " Unexpected message event" $MSC$_TraceMsg
         0 0 6 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCALL_PROC_1' and gateway 'Gateway_1'
      }ACTION
  }STATE

   \  ----- connector segment 'CALL_INITIATED' -----
  20 STATE_INIT{
         7 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rALERT_1'
         1 $MSC$_ResetTimerFlag \ timer 'T310'
  }STATE_INIT
  20 STATE{
      " Error while matching primitive 'rALERT_1'" 7 0 0 $MSC$_RecvPrimitive
      ACTION{
         0 0 7 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'
         0 $MSC$_SetGotoModifierFlag
         7 $MSC$_SetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rALERT_1'
         10 0 $MSC$_NewState
      }ACTION
      1 $MSC$_Timeout \ timer 'T310'
      ACTION{
         0 0 7 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'


          0 $MSC$_SetGotoModifierFlag
          1 $MSC$_SetTimerFlag \ timer 'T310'
          10 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
          " Unexpected timer event" $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
          " Unexpected message event" $MSC$_TraceMsg
          0 0 7 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rALERT_1' and gateway 'Gateway_1'
      }ACTION
```

```
   }STATE

    \  ----- connector segment 'CALL_PROCEEDING' -----
   21 STATE_INIT{
         8 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rCONN_1'
   }STATE_INIT
   21 STATE{
      " Error while matching primitive 'rCONN_1'" 8 0 0 $MSC$_RecvPrimitive
      ACTION{
         0 0 8 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCONN_1' and gateway 'Gateway_1'
         0 $MSC$_SetGotoModifierFlag
         8 $MSC$_SetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rCONN_1'
         13 0 $MSC$_NewState
      }ACTION
      ?TM_TIMEOUT
      ACTION{
         " Unexpected timer event" $MSC$_TraceMsg
      }ACTION
      FALSE E-SAP @ 0 = OR
      ACTION{
         " Unexpected message event" $MSC$_TraceMsg
         0 0 8 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rCONN_1' and gateway 'Gateway_1'
      }ACTION
   }STATE

    \  ----- connector segment 'CALL_DELIVERED_ACTIVE' -----
   22 STATE_INIT{
         10 $MSC$_ResetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rREL_COM_1'
         3 $MSC$_ResetTimerFlag \ timer 'T305'
   }STATE_INIT
   22 STATE{
      " Error while matching primitive 'rREL_COM_1'" 10 0 0
$MSC$_ RecvPrimitive
      ACTION{
         0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'
         0 $MSC$_SetGotoModifierFlag


10 $MSC$_SetMsgFlag \ message 'PROT<ETSI> send to
EMUL<isdnl2>/rREL_COM_1'
         15 0 $MSC$_NewState
      }ACTION
      3 $MSC$_Timeout \ timer 'T305'
      ACTION{
         0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'
```

```
          0 $MSC$_SetGotoModifierFlag
          3 $MSC$_SetTimerFlag \ timer 'T305'
          15 0 $MSC$_NewState
       }ACTION
       ?TM_TIMEOUT
       ACTION{
          " Unexpected timer event" $MSC$_TraceMsg
       }ACTION
       FALSE E-SAP @ 0 = OR
       ACTION{
          " Unexpected message event" $MSC$_TraceMsg
          0 0 10 $MSC$_FreeEventStructure \ free event structure of message
'PROT<ETSI> send to EMUL<isdnl2>/rREL_COM_1' and gateway 'Gateway_1'
       }ACTION
    }STATE
( >>>>>>>>>> end of instance 'Phone' <<<<<<<<<< )

 $MSC$_Constructor
 MSC_MENU_CTRL_FCT ( calls the menu control function )
 " MSC scenario 'isdn_user' loaded" $MSC$_PrintString
```